

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 57267		Date of mailing (day/month/year) 25 SEP 2007 FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/IL06/00322	International filing date (day/month/year) 12 March 2006 (12.03.2006)	Priority date (day/month/year) 15 March 2005 (15.03.2005)	
International Patent Classification (IPC) or both national classification and IPC IPC: H01Q 1/38(2006.01),1/24(2006.01),1/48(2006.01) USPC: 343/700MS,702,846			
Applicant GALTRONICS LTD.			

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 07 August 2007 (07.08.2007)	Authorized officer Shih-Chao Chen Telephone No. (571) 272-1819
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Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE
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International application No.

PCT/IL06/00322

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 3 YES

Claims 1-2, 4-12 NO

Inventive step (IS)

Claims 3 YES

Claims 1-2, 4-12 NO

Industrial applicability (IA)

Claims 1-12 YES

Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-2 and 4-12 lack novelty under PCT Article 33(2) as being anticipated by Ying et al. (U.S. Patent No. 6,650,294).

Regarding claim 1, Ying et al. teaches in figures 2-7 an antenna having multiple radiating bands, comprising: a ground plane [405]; a feed plate [420] extending generally parallel to and being spaced from the ground plane by a first distance and having a feed connection [425] extending between the feed plate and the ground plane; at least one radiating element [410] extending generally parallel to and being spaced from the feed plate by a second distance, and at least one galvanic connector [415] connecting the at least one radiating element at a first location on the at least one radiating element to the ground plane being separated from the feed connection by a third distance, the first, second and third distances being selected to achieve desired impedance matching of the feed plate, and the feed plate feeding the at least one radiating element at a location corresponding to an impedance substantially greater than 50 Ohm at least one band (See FIG. 4A-C).

Regarding claim 2, Ying et al. teaches in figures 2-7 an antenna according to claim 1, wherein the ground plane [405] has an aperture (See FIG. 4B) formed therein, and the feed connection [425] extends through the aperture.

Regarding claim 4, Ying et al. teaches in figures 2-7 an antenna having multiple radiating bands, comprising: a ground plane [405]; a feed plate [420] extending generally parallel to and being spaced from the ground plane by a first distance and having a feed connection [425] extending between the feed plate and the ground plane; at least one radiating element [410] extending generally parallel to and being spaced from the feed plate by a second distance, and at least one galvanic connector [415] connecting the at least one radiating element at a first location on the at least one radiating element to the ground plane being separated from the feed connection by a third distance, the feed plate [420] at least partially overlapping portions of at least two conductive arms [410A, 410B] defined by the at least one radiating element [410] and the at least one galvanic connector [415].

Regarding claim 5, Ying et al. teaches in figures 2-7 an antenna according to claim 6, and also comprising a dielectric support platform (i.e. air) underlying the at least one radiating element [410].

Regarding claim 6, Ying et al. teaches in figures 2-7 an antenna having multiple radiating bands, comprising: a ground plane [405]; a feed plate [420] extending generally parallel to and being spaced from the ground plane by a first distance and having a feed connection [425] extending between the feed plate and the ground plane; at least one radiating element [410] extending generally parallel to and being spaced from the feed plate by a second distance, and at least one galvanic connector [415] connecting the at least one radiating element at a first location on the at least one radiating element to the ground plane being separated from the feed connection by a third distance, the first, second and third distances being selected to achieve desired impedance matching of the feed plate, the feed plate providing inductive [235] and capacitive coupling for feeding the at least one radiating element (See FIG. 2-3 & FIG. 4A-C).

Regarding claim 7, Ying et al. teaches in figures 2-7 an antenna according to claim 6, and also comprising at least one galvanic

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In case the space in any of the preceding boxes is not sufficient.

connector [415] connecting the at least one radiating element [410] to the ground plane [405].

Regarding claim 8, Ying et al. teaches in figures 2-7 an antenna according to any claims 3 to 7, and wherein the first, second and third distances are selected to achieve desired impedance matching of the feed plate [420].

Regarding claim 9, Ying et al. teaches in figures 2-7 an antenna according to any of the preceding claims, and wherein the feed plate comprises a capacitive feed plate [420].

Regarding claim 10, Ying et al. teaches in figures 2-7 an antenna according to any of the preceding claims, and wherein the feed connection [415] extends from a feed contact pad (See FIG. 4B) which is electrically insulated from the ground plane [405].

Regarding claim 11, Ying et al. teaches in figures 2-7 an antenna according to any of the preceding claims, and wherein the at least one radiating element [410] is formed with at least one slot (See FIG. 4 A).

Regarding claim 12, Ying et al. teaches in figures 2-7 an antenna according to any of the preceding claims, and wherein the at least one galvanic connector [425] extends from a ground contact pad (See FIG. 4B) which is galvanically connected to the ground plane [405].

Claim 3 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest there being a capacitive and a galvanic connection between the feed plate and the at least one radiating element.